



INTRO	DUCTION	1
Overvi	ew of the Study Area	1
Study 1	Process	5
Vision.	, Goals, and Objectives	5
1.3.1	Vision	
1.3.2	Goals and Objectives	
Docum	nent Organization	7
GENE	RAL DESCRIPTION OF THE STUDY CORRIDORS	8
Enviro	nmental Setting	8
2.1.1	General Conditions Common to All Corridors	9
2.1.2	Conditions and Resources along SR-9	
2.1.3	Conditions and Resources along SR-17	
2.1.4	Conditions and Resources along SR-59	
2.1.5	Population and Employment	
Roadw	ay Characteristics	31
2.2.1	SR-9 Conditions	32
2.2.2	SR-17 Conditions	
2.2.3	SR-59 Conditions	51
Transp	oortation Plans That Apply to the Study Area	58
2.3.1	Hurricane City Transportation Master Plan	
2.3.2	La Verkin City Community Transportation Plan and General Plan	
2.3.3	Springdale Town Community Transportation Plan, General Plan, and Trail Feasibility Study	60
2.3.4	Toquerville City Transportation Master Plan	
2.3.5	Apple Valley Road Plan	62
2.3.6	UDOT Plans: Statewide Transportation Improvement Program	
	(STIP) and Long-Range Transportation Plan (LRTP)	
2.3.7	Rural Planning Organization	62
FUTUE	RE CONDITIONS IN THE STUDY AREA	63
SR-9		63
SR-17		64
PUBLI	C INVOLVEMENT	68
Genera	al Public Involvement Strategy	68
Public	Involvement Goals and Objectives	69
4.2.1	Public Involvement Goals	
4.2.2	Public Involvement Objectives	
	older and Agency Interaction	
	Outreach	
4.4.1	St. George Transportation Expo – February 4, 2008	
4.4.2	Public Open House – May 28, 2008	



4.5	Public Involvement Tools/Mailings and Media	72
	4.5.1 Initial Postcard	
	4.5.2 May 28, 2008, Print Advertisement	
	4.5.3 Informational Postcard	74
5.0	PROJECT IDENTIFICATION AND RECOMMENDATIONS	75
5.1	Project Identification Methodology	75
5.2	Project Lists	76
5.3	City Plans	96
5.4	Access-Management Recommendations	99
	5.4.1 SR-9	
	5.4.2 SR-17	
	5.4.3 SR-59	103
6.0	IMPLEMENTATION PLAN AND COST ESTIMATES	104
6.1	Implementation	104
6.2	Cost Estimates	109
<b>-</b> c	<b>D</b>	
7.0	REFERENCES	124
	Tables	
	13.6.33	
Table 2	2-1. Expected Archaeological Resource Sites along the Study High	way
	Segments	9
	2-2. Special-Status Soils along the Study Highway Segments	
Table 2	2-3. Land Ownership along SR-9	12
	2-4. Land Ownership along SR-17	
	2-5. Land Ownership along SR-59	
	2-6. Recent Population Growth in Washington County (2000–2007)	
	2-7. Population Projections for Washington County (2010–2035)	
	2-8. City and Town Population Projections (2010–2040)	
	2-9. Washington County Employment (2008 and 2035)	
	2-10. Average Right-of-Way Width by Segment of SR-9	
	2-11. Pavement Ratings and Ranges	
	2-12. Skid Numbers and Rut Depths on SR-9	
	2-13. Bridges along SR-9	
	2-14. Existing (2006) Levels of Service on SR-9	
	2-15. Access-Management Standards for State Highways	
	2-16. Access-Management Categories for SR-9 in the Study Area	
	2-17. Skid Numbers and Rut Depths on SR-17	
	2-18. Bridges along SR-17	
	2-19. Existing (2006) Levels of Service on SR-17	
	2-20. Average Right-of-Way Width by Segment of SR-59	
Table 2	2-21. Skid Numbers and Rut Depths on SR-59	53



Table 2-22. Bridges along SR-59	54
Table 2-23. Existing (2006) Levels of Service on SR-59	54
Table 2-24. Access-Management Categories for SR-59 in the Study Area	55
Table 3-1. Future (2035) Levels of Service on SR-9	63
Table 3-2. Future (2035) Levels of Service on SR-17	65
Table 3-3. Future (2035) Levels of Service on SR-59	66
Table 4-1. Public Involvement Support Tools	68
Table 4-2. Public Involvement Timeline	69
Table 5-1. EWCTS Recommended Improvement Projects	78
Table 5-2. EWCTS Recommended Coordination Agreements and Programs	91
Table 5-3. Initial Project Ranking Example	94
Table 5-4. Weighted Project Ranking Example	95
Table 5-5. Segment Summary	95
Table 5-6. Ranking Summary	95
Table 5-7. Community Transportation Plan Recommendations	97
Table 6-1. EWCTS Project Implementation Strategy	105
Table 6-2. Planning-Level Cost Estimates for the Eastern Washington County	
Transportation Study	
Table 6-3. Project 9-C: Install Two-Way Left-Turn Lanes on SR-9	111
Table 6-4. Project 9-D: Add Second Traffic Lane To Improve Intersection of SR-9 and SR-17	112
Table 6-5. Project 9-I: Add Left-Turn Lanes on SR-9	113
Table 6-6. Project 9-O: Improve Intersection of SR-9 and Kolob Reservoir Road	114
Table 6-7. Project 17-D: Add Two-Way Left-Turn Lanes on SR-17	115
Table 6-8. Project 17-G: Improve Curve Safety at MP 1.2 on SR-17	116
Table 6-9. Project 17-J: Construct Passing Lanes on SR-17	117
Table 6-10. Project 59-A: Improve Intersection of SR-59 and SR-9 in Hurricane	118
Table 6-11. Project 59-D: Construct Two-Way Left Turn Lanes on SR-59	119
Table 6-12. Project 59-F: Construct Right- and Left-Turn Lanes on SR-59	120
Table 6-13. Toquerville Bypass Preferred Alignment	121
Table 6-14. Toquerville Bypass Option 1A: Grassy Lane Alignment	122
Table 6-15. Toquerville Bypass Option 3A: La Verkin Alignment	123
Table A-1. Summary of Stakeholder and Agency Interviews	127
Table B-1. Summary of Public Comments from the February 4, 2008,	
St. George Transportation Expo	135
Table B-2. Summary of Public Comments from the May 28, 2008. Open House	137



## **Figures**

Figure 1. Study Area	3
Figure 2. Land Ownership	
Figure 3. Waterway Crossings	17
Figure 4. Natural Resource Considerations	21
Figure 5. Annual Average Daily Traffic (AADT) for 2006 and 2035	41
Figure 6. SR-9 Recommended Projects (1 of 2)	
Figure 7. SR-9 Recommended Projects (2 of 2)	86
Figure 8. SR-17 Recommended Projects (1 of 2)	87
Figure 9. SR-17 Recommended Projects (2 of 2)	
Figure 10. SR-59 Recommended Projects (1 of 2)	89
Figure 11. SR-59 Recommended Projects (2 of 2)	
Appendices	
APPENDIX A. SUMMARY OF STAKEHOLDER AND AGENCY INTERVIEWS	127
APPENDIX B. SUMMARY OF PUBLIC COMMENTS	135
APPENDIX C. SR-9 COOPERATIVE CORRIDOR PRESERVATION	120
AGREEMENT	139



#### Introduction 1.0

The Utah Department of Transportation (UDOT) recognizes the importance of the transportation system in eastern Washington County, Utah, and commissioned a study (the Eastern Washington County Transportation Study, or EWCTS) to formulate strategies for meeting the long-term needs of the public and for developing efficient transportation facilities in the area. This report, which summarizes the results of the study, provides recommendations for improvements to three transportation corridors: State Route (SR) 9, SR-17, and SR-59. This report also summarizes the existing conditions of the highways, describes the environmental setting where the highways are located, provides recommendations for implementing improvement projects, and provides cost estimates for some of the recommended projects.

UDOT used a collaborative process to complete the transportation study that involved seeking input from affected local governments, state and federal agencies, user groups, property owners, and business operators. The intent of the study was to develop a plan that identifies transportation needs and prioritizes potential solutions (project recommendations) for the three corridors. The study addressed needs through about 2035.

### 1.1 **Overview of the Study Area**

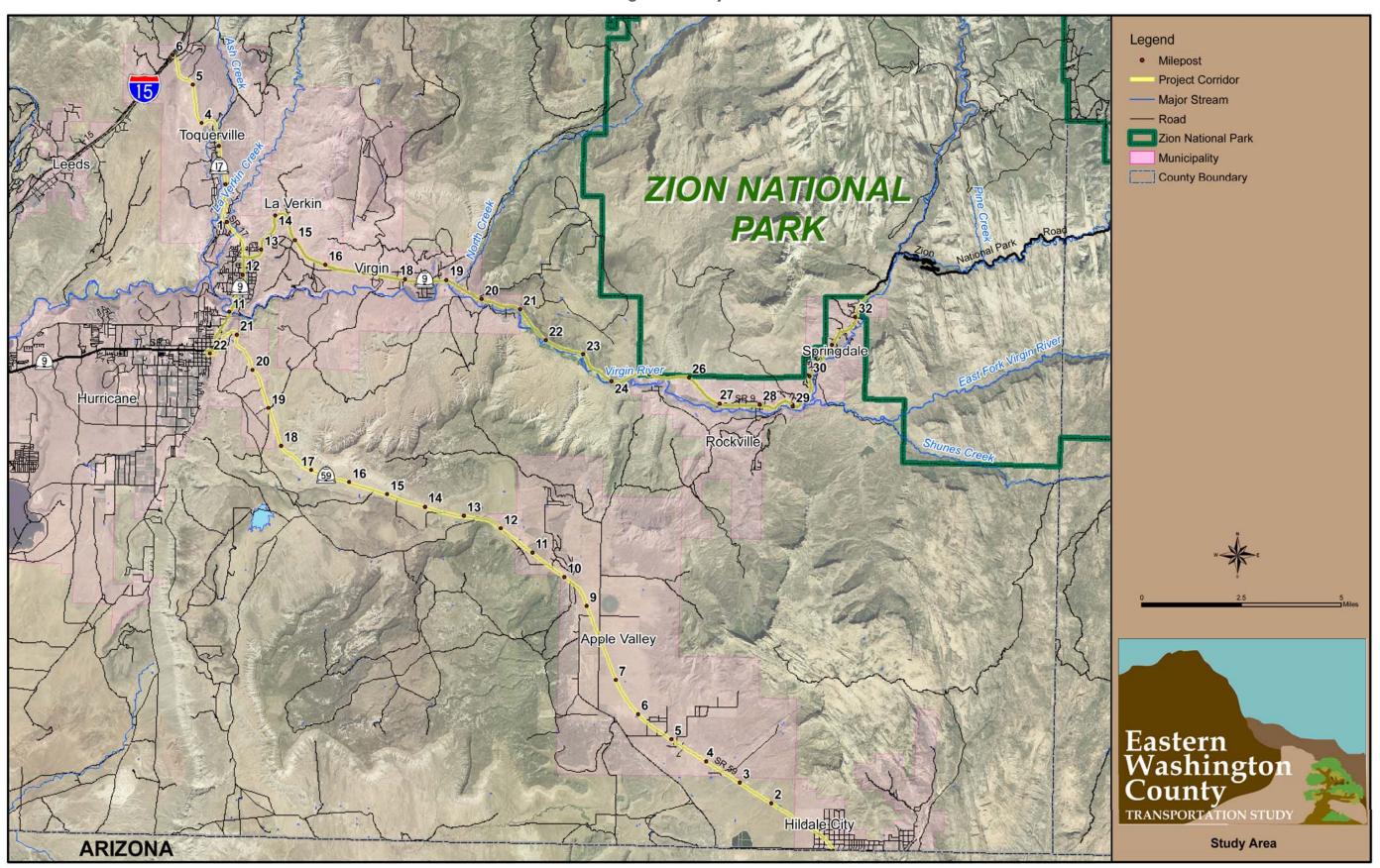
This study report focuses on the condition of and needs along SR-9 from Hurricane to the Zion National Park boundary in Springdale, all of SR-17, and all of SR-59. The segment of SR-9 in the study area runs generally east-west for about 22 miles (see Figure 1 below). SR-17, which is about 6 miles long, runs north-south between Interstate 15 (I-15) and SR-9. SR-59 runs generally northwest-southeast for about 22 miles, from Hildale at the Utah-Arizona border to Hurricane. In total, the study area includes about 50 miles of state highway.



This page is intentionally blank.



Figure 1. Study Area





This page is intentionally blank.

4 | Eastern Washington County Transportation Study Report



#### 1.2 **Study Process**

The corridor study process involved three phases. The first phase focused on gathering information about existing highway conditions, environmental resources in the area, and current land-use patterns. In the second phase, UDOT reviewed future population and traffic projections that would affect how the highways function and that would require highway improvements. Finally, UDOT used the information gathered in the first two phases to complete the third phase, which consisted of identifying a "vision" for the corridors and then developing and ranking a list of improvement projects that would help UDOT meet this vision. This study report focuses on the third phase—the improvement project list—but also summarizes the results of the first two phases.

#### 1.3 Vision, Goals, and Objectives

As part of the corridor study process, UDOT formed a vision for the EWCTS corridors and identified goals that support this vision.

#### Vision 1.3.1

The state routes that are included in the EWCTS area (SR-9 from Hurricane to Springdale, SR-17, and SR-59) should provide a safe travel route for local, regional, and through traffic to meet personal and commercial needs.

- Corridor design should accommodate the needs of all travel types including passenger vehicles, recreational vehicles, bicycles, and pedestrians as well as the unique requirements of large trucks.
- The corridor should have enough capacity to minimize congestion and facilitate traffic operations.
- Roadway features should be designed and constructed to accommodate safe access onto and off of the highways for all vehicle types and sizes.
- The corridors should be designed and managed to minimize impacts to and enhance the adjacent natural and human environments.



### 1.3.2 Goals and Objectives

### Goal 1: Transportation facilities should be reasonably safe for users.

To achieve this goal, UDOT should focus on:

- Adequate number and length of passing lanes
- Adequate number of safe pull-outs
- Intersection treatments as needed
- Striping and signing as needed
- Standard shoulder widths
- Intelligent transportation system (ITS) technology as needed
- Rumble strips
- Roadway geometry
- Bicycle and pedestrian considerations
- Parking restrictions

# Goal 2: Operational and capacity improvements should minimize delay and improve safe and efficient movement of traffic.

To achieve this goal, UDOT should focus on:

- Adequate number of travel lanes for expected volumes
- Adequate number and placement of auxiliary/turn lanes
- Adequate sight distance
- Maintenance of existing surfaces and structures
- Adequate lane and shoulder width



### Goal 3: Incorporate roadway improvements to balance regional traffic flow and reasonable access to land development.

To achieve this goal, UDOT should focus on:

- Access control
- Corridor Agreements with local governments
- Developer responsibility for design and build of appropriate intersection/interchanges to access the state highway
- Coordinated land-use planning with local government agencies
- Maintenance of regional traffic flow

### Goal 4: Corridor design should minimize impacts and enhance benefits to the natural and human environments where possible.

To achieve this goal, UDOT should:

- Implement context-sensitive solutions (CSS) that minimize impacts and enhance the natural and built environments
- Minimize impacts to adjacent natural, physical, archaeological, historical, cultural, and human resources
- Include opportunities for public involvement during project planning

### **Document Organization** 1.4

This corridor study report includes the following sections:

Section 1.0: Introduction

Section 2.0: General Description of the Study Corridors

Section 3.0: Future Conditions in the Study Area

Section 4.0: Public Involvement

Section 5.0: Project Identification and Recommendations

Section 6.0: Implementation Plan and Cost Estimates

Section 7.0: References